REMARKS/ARGUMENTS

Enclosed is a Request for Continued Examination Transmittal, and a Request for a one-month Extension of Time in which to respond to the final office action. Reconsideration of this application in light of Applicants' Request for Continued Examination under 37 CFR 1.114 and in response to the final rejection of Claims 1-18, dated October 31, 2005, is requested. Claims 1-18 are pending in the application.

Independent Claims 1 and 14 have been amended to more particularly point out what Applicants regard as their invention. As noted in the amended claims, the invention is directed to an improvement in cellulosic products and paper and paperboard products that are used in the packaging of materials which contain an oil, fat, moisture or solvent, e.g., a food product, where the oil, fat, moisture, or solvent comes in contact with the cellulosic substrate. These cellulosic substrates and paper products are coated with a polymer coating that provides a barrier to moisture, oils, and greases associated with such materials, particularly food products. Coated cellulosic substrates, paper, and paperboard products prevent the oils, solvents, moisture or fats from penetrating the cellulosic substrate even at elevated warehouse temperatures. Further details regarding the general application for these cellulosic products is set forth in the "Background of the Invention."

Support for the amendments to Claims 1 and 14 can be found at page 3, lines 11-30, paragraphs [0011], [0012] and [0013] and page 7, line 14, paragraph [0026]. Example 9 and the "Background of the Invention" provide support for the limitations of a barrier to moisture, oils, fats, solvents and the like from materials such as food products. Another property mentioned in previous responses is that the cellulosic substrates coated with the polymer coating are non-blocking, i.e., paper coated with these cellulosic substrates do not adhere when rolled (page 3, line 22 and page 23, paragraphs [0063 and 0064]). In other words, the polymer coatings do not cause the cellulosic substrate to adhere to itself.

Rejection of Claims 1-4, 6-11 and 13 under 35 USC 102(b) Over Daniels et al. US 5,872,181

At paragraphs 2-3 of the final rejection, Claims 1-4, 6-11 and 13 were rejected under 35 U.S.C. §102(b) as being anticipated by Daniels et al. '181. The Examiner noted that Figure 1 clearly taught materials having a tensile storage modulus within Applicants' claimed range and Example 6 showed the synthesis of a vinyl acetate/ethylene polymer incorporating acrylic acid. Polyvinyl alcohol was used as the protective colloid. In addition, the Examiner noted that the commercial Airflex® polymers exhibited the claimed storage modulus.

With regard to the claimed parameter, "crystalline melting point," the Examiner posited the polymers of the prior art had heats of fusion and melting points within the claimed range because of the broad melting point range specified. Thus, it was deemed that the specified property of the rejected claims was inherent in the disclosed polymers.

Response to the Rejection of Claims 1-4, 6-11 and 13 Over Daniels et al. '181 Under 35 U.S.C. §102(b)

Reconsideration of the rejection of Claims 1-4, 6-11 and 13 under 35 U.S.C. §102(b) over Daniels et al. '181 is requested. Independent Claims 1 and 14, as amended, call for an improvement in an application where the barrier coating applied to a cellulosic substrate comes in contact with an oil, fat, solvent, moisture, etc., that may be contained in a product, such as a food product. The improvement resides in the barrier coating applied to the cellulosic substrate. There are two key parameters for the claimed vinyl acetate/ethylene polymers that are used as the barrier coating. The parameters are: ethylene crystallinity with a thermal melting point of from 35 to 110 °C, and a high tensile storage modulus.

With this response, a declaration has been filed by Mr. Daniels who is a coinventor of the Daniels et al. '181 reference. The declaration provides a factual basis for the prior arguments made by Applicants that the polymers described in Daniels et al. '181, including the commercial vinyl acetate/ethylene polymers recited therein, do not have ethylene crystallinity with a thermal melting point within the range specified by Applicants. Mr. Daniels also points out that he has actual knowledge of the properties of Applicants' polymers described in the above-identified application and those thermal properties are significantly different from those of the polymers described in '181.

While the arguments of the Examiner pertaining to anticipation under 35 U.S.C. §102(b) were appropriate in light of the fact that the polymer compositions appeared similar and that some of the prior art polymers had tensile storage modulus within the claimed range, the conclusion reached by the Examiner that there was clear reason to believe they would have the claimed melting points is rebutted by the statement of Mr. Daniels. The polymers in '181 do not have the claimed melting points. Accordingly, the rejection under 35 U.S.C. §102(b) must be withdrawn.

Response to the Rejection of Claims 1-18 Over Daniels et al. US 5,872,181 Under 35 U.S.C. §103(a) and Daniels et al. US 6,319,978

The Examiner rejected all claims under 35 U.S.C. §103(a) over Daniels et al. '181 (paragraphs 5-9 of the final Office Action) and Daniels et al. '978 (paragraphs 10-13 of the Office Action). Applicants have combined their arguments with respect to the rejection of Claims 1 to 18 under 35 U.S.C. §103(a) on the basis that the claimed subject matter would not have been obvious over Daniels et al. '181 and Daniels et al. '978. When analyzing the two Daniels et al. references in combination, it becomes clear that the respective polymer systems disclosed have significantly differing modulus properties. One system ('181) finds application as a laminating adhesive for bonding polymer films for use in flexible food packaging (col. 13, lines 61-66) and the other polymer system ('978) finds use as a pressure sensitive adhesive. Both types of the Daniels et al. polymers, i.e., the polymers of '181, except for some of the commercial vinyl acetate/ethylene polymers and, of course, the pressure sensitive adhesives of Daniels et al. '978, are tacky to the touch at room temperature.

It is respectfully suggested that one would be hard pressed to find the motivation required under 35 U.S.C. §103(a) to generate a polymer system having specific properties, whatever the composition, over two references disclosing polymer systems that are significantly different in terms of their modulus flow properties and applications. Applicants have gone to great length to point out that their polymers have different thermal properties from those in the cited art. The claimed properties of tensile storage modulus and thermal melting point based upon ethylene crystallinity lead to a polymer coating that is non blocking (test for blocking is disclosed in Applicants' application at page 21, [0058]), i.e., the antithesis of a pressure sensitive adhesive as disclosed by Daniels et al. '978. And now, Applicants point out that the barrier coatings employed in amended Claims 1-18 come in contact with materials containing an oil, moisture, grease, etc. as found when in contact with a food product, and thus the non desirability of using a pressure sensitive adhesive of the type in Daniels et al. '978 becomes obvious.

Mr. Daniels, also in the declaration, stated that the pressure sensitive adhesives of '978 did not have a thermal melting point of from 35 to 110 °C. Comparative Example 20 in companion case, serial number 10/378, 996, shows a thermal melting point of -2.5 °C for a representative pressure sensitive adhesive described in Daniels et al. '978, thus corroborating the statements in the declaration.

The rejection of amended Claims 1-18 under 35 U.S.C. §103(a) over Daniels et al. '181 is not supported. These polymeric coating are used to laminate polymeric films for use in flexible food packaging where the polymeric film, not the polymeric coating itself, is in contact with oils, fats, etc., that are associated with these kinds of materials, e.g., a food product. Again, not only are the Daniels et al. polymers of the prior art different from Applicants' in terms of their thermal properties, per the declaration of Mr. Daniels, the claimed application for the cellulosic products is different and is not disclosed or taught in Daniels et al. '181. It is also noted that, in view of the tackiness of the polymers at room temperature, a cellulosic substrate coated with the polymer would block as well as stick to the product, e.g., food, when in contact therewith.

In summary, a rejection of Claims 1-18 under 35 U.S.C. §103(a) is not warranted based upon Daniels, et al. '181 and Daniels et al. '978. Neither reference discloses polymers having the claimed properties associated with the Applicants' polymers employed as a barrier coating for cellulosic substrates. Neither reference remotely provides a teaching and motivation to cause one to generate Applicants' polymers and their application as a barrier coating to materials containing an oil, fat, grease or solvent, e.g., a food product. In the absence of a teaching or motivation to produce polymers of the type claimed by Applicants for use as a barrier coating for cellulosic products in either reference, there is no basis for rejecting Claims 1-18 under 35 U.S.C. §103(a).

Rejection under 35 USC 103(a) Over Daniels et al. '978, '181 and Worrall et al. US 3,355,322

Worrall et al. was cited as teaching the application of vinyl acetate/ethylene adhesives for paper application. As acknowledged in a prior response, it was indicated that the polymers of Worrall et al. as with the polymers of Daniels, et al, '181 and '978, do not have ethylene crystallinity within the claimed range of thermal melting point and they do not have a heat of fusion as set forth in many dependant claims. Accordingly, a rejection of Claims 1-18 under 35 U.S.C. §103(a) based upon these references is not warranted. It was also mentioned that Worrall et al. was cited in USSN 10/378,996, a companion application to this application. (The Examiner, in an earlier Office Action, rejected this application over the USSN '996 application based upon double patenting).

In view of the rejection here, and of companion application 10/378,996 over Worrall et al., Dr. Rabasco, an inventor in this case, prepared polymers in an attempt to reproduce

Composition B of Example 1 of Worrall et al., to ascertain the properties thereof. A declaration is filed with this response. The declaration provides differential scanning calorimetry (DSC) scans of the polymer types represented by Composition B of Worrall's Example 1 and compared to the polymer of Example 8 in Applicants' specification. As can be seen from the DSC scans, there is no ethylene crystallinity having a thermal melting point of from 35 to 110 °C in the Worrall et al. polymers. As Dr. Rabasco points out, the polymers of Worrall et al. are dissimilar to those of Applicants which are employed here for use as barrier coatings. Their use as coatings for cellulose substrates where the coating comes in contact with food products as set forth in the claims as amended would not have been obvious under 35 U.S.C. §103(a).

Lastly, the Examiner should note that all of the vinyl acetate/ethylene polymers described in the cited references are similar in composition, i.e., they have overlapping levels of vinyl acetate and ethylene, similar stabilizing systems, and they are prepared by similar methods, e.g., emulsion polymerization. Yet, each of the polymers have morphology, modulus and flow properties which are dissimilar from one another. The structure of the polymer and the form of the ethylene in the polymer play an important role. That is the case at bar. Applicants' polymers, at first glance, appear compositionally similar to the prior art polymers, but in fact they are quite different in terms of structure. The structural difference provides at least one additional property to those in the prior art and that is they have ethylene crystallinity having a thermal melting point of from 35 to 110 °C. That property is a key property in the application as a barrier coating for cellulosic products as claimed.

Request for Information Under 37 CFR 1.105

Clarification of the request for information under 37 CFR 1.105 is requested in light of Applicants' remarks in the response of August 12, 2005. Applicants had indicated that a number of vinyl acetate/ethylene polymers marketed under the trademark "Airflex" had been used with paper, fabric and cardboard. For example Airflex 400, 465, and 7200 had been used as laminating adhesives. Airflex 105, not mentioned in the references here, has been used as a nonwoven binder for paper products, e.g., paper towels. But as Applicants pointed out in the prior response, and now pointed out in the declaration of Mr. Daniels, none had ethylene crystallinity having a thermal melting point of from 35 to 110 °C and a heat of fusion as specified in addition to the claimed tensile storage modulus. If further information is required, it will be necessary for the Examiner to be more specific as Applicants have

attempted to provide the necessary information relevant to the issue of patentability under the statutes.

Closing

In closing the Applicants request the rejection of Claims 1-18 under 35 U.S.C. §102(b) over Daniels et al. US 5,872,181 and under 35 U.S.C. §103(a) over Daniels, US 5,872,181; Daniels et al. US 6,319,978 and Worrall et al. US 3,355,322 be withdrawn as none of prior art polymers described have properties identical to, or sufficiently similar, to the properties of Applicants' polymers employed as a barrier coating for cellulosic substrates as set forth in Independent Claims 1 and 14 and the claims dependent upon Claims 1 or 14.

In view of the amendments and arguments made herein, it is believed that the application is in condition for allowance and should be passed to issue.

Respectfully submitted,

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